

REMARKS

The aluminum content of independent claims 1 and 7 has been clarified as supported by, for example, pages 4 and 17.

In the outstanding Office Action, claims 1 and 7 are objected to because of an informality in that the Patent Office contends that the term "less than about 1-3 mils" is awkward. Applicants respectfully disagree, but have amended these claims as suggested by the Examiner in the interest of advancing the prosecution of the subject application. Accordingly, reconsideration and removal of the objections is requested.

Claims 1 and 7 are also rejected under 35 USC § 112, first paragraph, as allegedly being unclear because of the use of "without a weight penalty." Applicants also respectfully disagree with this rejection and assert that the claims are clear. However, these claims have been further clarified, as also suggested by the Examiner. Accordingly, reconsideration and removal of this rejection is believed to be warranted.

Lastly, claims 1-13 and 28-30 are rejected under 35 USC § 103(a) as being obvious over Rigney et al. (US 6,153,313) in view of Rosenzweig et al. (EP 1 123 987).

The foregoing rejection is respectfully disagreed with, and is traversed below.

Rigney et al. disclose a coating system employing a NiAl based intermetallic coating containing 30 to 60 atomic percent aluminum so as to be predominantly of the beta-NiAl phase, plus additional alloying additions intended to increase the creep strength of the coating. Rigney et al. are concerned with the compositional features of a bond coat useful in a thermal barrier coating system. The coating disclosed therein is also described as being suitable as an environmental coating (Col. 10, lines 18-23).

Rigney et al. do not disclose a method for repairing a coated component, as claimed herein,

including the application of Applicants' claimed lower growth environmental bond coating, as set forth in step c). In contrast to Applicants' claims, Rigney et al. disclose in Table 1 a broad range of aluminum as 30-60 atomic percent. Rigney et al. particularly concern bond coats having a specific composition for increased creep strength.

Rosenzweig et al. disclose an aluminide coating system, which first requires the deposition of a layer of elemental metal over the cleaned substrate, the deposited metal being matched to the composition of the substrate. The elemental metal, such as Ni or Co, serves as a new surface into which aluminum is subsequently deposited and a protective coating grown ([paragraph 0015]). The new protective aluminide coating is facilitated by minimizing the amount of metal diffusing from the base material to interact with aluminum to form the new aluminide coating ([0009]). It is the elemental metal layer that combines with the aluminum applied during an aluminiding treatment to form the protective aluminide coating ([0009]).

Rosenzweig et al. do not disclose a method for repairing a coated component, as in Applicant's independent claims 1 and 7, wherein a lower growth environmental bond coating is applied directly to the remaining base metal substrate of the component. In contrast, Rosenzweig et al. require the application of an elemental metal layer directly on its base metal substrate to prevent any interaction between the base metal substrate and a subsequently applied coating.

Rosenzweig et al. disclose that its aluminide coating system is restored during the repair process therein, without consuming the base metal of the airfoil undergoing repair. In contrast, independent claims 1 and 7 specify that a portion of the base metal substrate is removed.

Thus, Rosenzweig et al. also do not disclose or suggest Applicant's method as set forth in independent claim 1, wherein a lower growth environmental bond coating and remaining metal substrate of the component interact to form a diffusion zone. Rosenzweig et al.'s system is specifically designed to prevent such interaction by use of an intermediary layer of elemental metal between the base metal substrate and subsequently applied coating.

The Examiner asserts at pages 7-8 of the outstanding Action that:

“ ... it is the coating material and method of Rigney which is being employed in the rejections above. Rosenzweig is merely provided as evidence that the claimed method of removing a prior art bond coat by removing the bond coating and a portion of the base metal substrate is known”

Applicants respectfully note that, as explained above, the Rigney et al. reference whether viewed alone or in combination with Rosenzweig does not disclose or suggest the subject claims. There is no teaching, suggestion or motivation that would lead one of ordinary skill in the art seeking to develop that which Applicants' claim to combine and then modify the teachings of the afore-cited references in an attempt to arrive at the subject claims. The TSM test provides helpful insights into the nonobviousness of the subject claims.

In an objective analysis considering the scope and content of the afore-cited art, the level of ordinary skill in the art, and the differences between the claimed invention and the prior art, it is respectfully asserted that the Examiner's obviousness rejection should be reconsidered and withdrawn.

For the foregoing reasons, independent claims 1 and 7 are believed to be patentable. Accordingly, claims 2-6, and 8-13 and 28-30 depending from an independent claim are also believed to be in condition for allowance.

All issues having been addressed, the subject application is believed to be in condition for immediate allowance. No new issues requiring a further search are raised and the Examiner is requested to enter and consider amendments and remarks set forth herein. Thus, all issues having been addressed, the subject application is believed to be in condition for immediate allowance.

Should the Examiner believe that a discussion would advance the prosecution of the subject application, the Examiner is encouraged to contact the undersigned at the telephone number listed below.

Respectfully submitted:

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11/26/07

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